

Phytonutriance®

Natural antioxidant solutions with a proven efficacy

A Natural Ingredient for Weight Management

Appl'in™
by Phytonutriance®



- > Apple extract powder
- > Standardized to 80% total polyphenols, 5% phloridzin
- > Glucose blocker
- > Patented product supported by human clinicals
- > May promote satiety effect

DIANA NATURALS Health & Cosmetics

Headquarters

BP 15 – 35560 Antrain – France
Tel +33 (0)2 99 98 40 77
Fax +33 (0)2 99 98 45 39

www.diana-naturals.com

Diana Naturals Inc

707 Executive Boulevard – Valley Cottage NY 10989
Tel. 1 845 268 5200
Fax 1 845 268 4626
Toll free 1 866 479 2555 (US & Canada)
bstagg@diana-naturals-inc.com



HEALTHY FRUIT FOR HEALTHY LIFE

Overweight and obesity, a true global pandemic

By **2015**, approximately **2.3 billion adults** will be **overweight** and more than **700 million** will be **obese**

World Health Organization



Appl'In™ story

France is well known for its variety of apples and orchards. Diana Naturals has developed close partnerships with **local apple producers** and has led extensive research work on apple's health benefits. **Apple polyphenols** have been identified, and **phloridzin**, which is a specific and unique polyphenol of the Rosaceae family, isolated and studied to identify its **gluco-blocker properties**. Composition and applications of Appl'In™ are proprietary to Diana Naturals.

Appl'In™ is also a very strong antioxidant, with 80% total polyphenols and an ORAC value of 8600. As a point of comparison, the ORAC value of green tea extract is 2470 per gram.

Appl'In™ Key Features

- 100% Natural
- High level of polyphenols
- Standardized to phloridzin
- Inhibits almost 60% of glucose absorption
- Could result in lower caloric intake (satiety effect)
- Supported by human clinical trials
- European Health Claim dossier submitted
- Patents on composition and application (EU, USA, Japan)
- Highly stable
- Food grade

Appl'In™ Health Claim submission

According to the WHO, approximately 1.6 billion adults (age 15+) were overweight in 2005, with at least 400 million obese adults and 20 million children under the age of five who are overweight.

As a result of these alarming statistics and in compliance with a new European regulation, Diana Naturals has submitted a proposal for an authorized health claim in Europe:

- **Can help to moderate the postprandial blood glucose level**
- **Can help to decrease the blood glucose level**



Frequently Asked Questions

What is Appl'In™?

Appl'In™ is a patented natural extract of apple standardized to phloridzin. This polyphenol specifically found in the fruits of Rosaceae inhibits glucose transport through the intestinal barrier. It is a popular ingredient in weight management products.

How does this extract compare to eating an apple?

The ingestion of one apple provides on average 2.5 mg of phloridzin. 50 mg of Appl'In provides the phloridzin equivalent of one apple.

Is Appl'In™ effective in weight management?

Diana Naturals has conducted independent efficacy studies, including *in vitro* and human clinical trials, to show that Appl'In™ inhibits glucose transport, significantly decreasing blood glucose concentration and possibly aiding in satiety.

Who should take Appl'In™?

Appl'In™ is recommended for overweight people and for people who want to control their appetite.

Is Appl'In™ safe?

The apple is a unique fruit for which regular consumption has been unquestionably linked to many health benefits, leading to the famous adage "an apple a day keeps the doctor away".

Appl'In™ is extracted from apples and uses food grade processes. Toxicity studies have also demonstrated Appl'In™'s safety (to be published).

Is Appl'In™ patented?

Appl'In™ is a unique preparation protected in Europe (patent granted), in the United States of America (patent granted) and in Japan (patent granted).

What is the recommended daily dosage of Appl'In™?

Efficacy studies have demonstrated that 100-250 mg of Appl'In™ is a daily effective dosage.

Where is Appl'In™ produced?

Appl'In™ is extracted from fresh apples, and is produced in France, in a NF EN ISO9001:2000 certified facility.

These statements have not been evaluated by the Food and Drug Administration.

This product is not intended to diagnose, treat, cure or prevent any disease.

APPL'IN™ GLUCOSE BLOCKING EFFECT

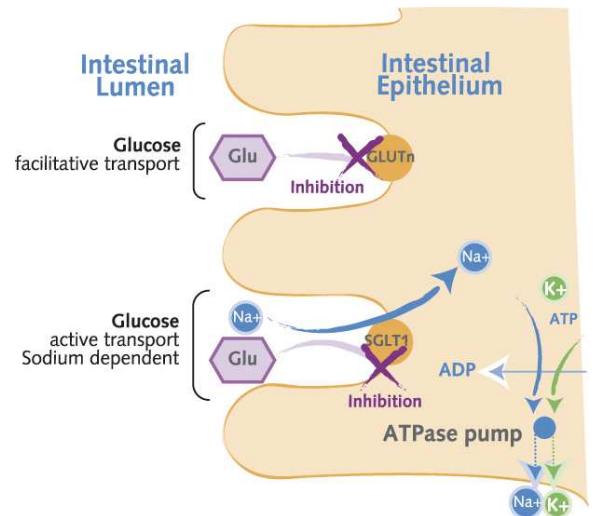
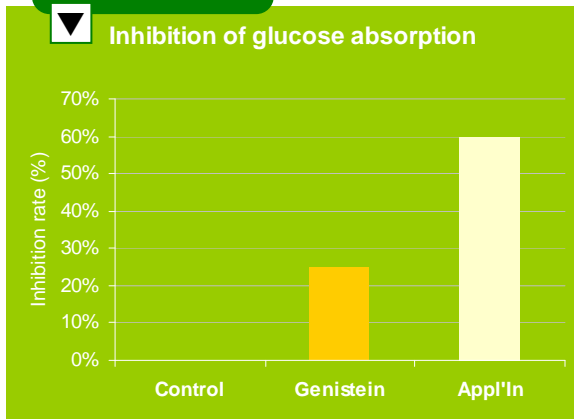
> Appl'In™ and glucose metabolism

Sugar is absorbed through the intestinal epithelium by two systems: active transport and facilitative transport (see figure at right).

The inhibition of active sugar transport by phloridzin has been identified since the early sixties in various *in vitro*, *ex vivo* and *in vivo* studies.

Diana Naturals *in vitro* study

Appl'In™ inhibits almost 60% of the glucose absorption



Ishikawa Var I cells, which specifically express glucose facilitative transport (GLUTn), have been used to show that Appl'In™ has an additional strong inhibitory effect on the transport of glucose through the facilitative transport system.

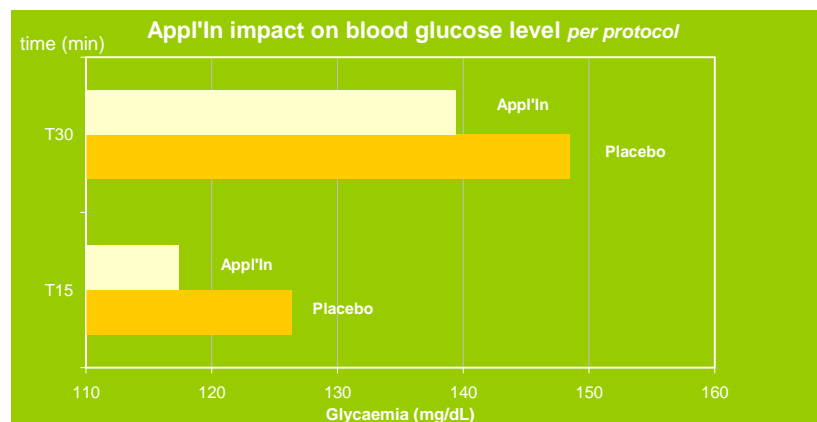
A known natural inhibitor of the GLUTn transporters was used as positive control: genistein at concentration of 2.7µg/ml.

> Human clinical trials

A double-blind, cross-over, placebo-controlled clinical trial has been done with 10 volunteers. This preliminary trial was led in collaboration with Dr Schmitt (CERNh), a specialist of diabetology, endocrinology and nutrition, to evaluate the impact of Appl'In™ on the glycemic response.

Results show:

- A **delay of the maximum glucose concentration (15 min)**, which could correspond to a satiety effect
- A **significant difference in blood glucose concentration**, which could correspond to a lower caloric intake



A larger clinical trial is in progress to confirm the satiety and the lower caloric intake effects of Appl'In™ highlighted in these first results.

Additional technical information and references available upon request.